

MEMORANDUM**CH2M HILL**

TO: File

COPIES: Jeff Randall/CH2M HILL

FROM: Douglas Kunkel/CH2M HILL

DATE: September 27, 1995

SUBJECT: Longview Fibre Groundwater Sampling

PROJECT: 117627.A0.ZZ

Introduction

This memorandum summarizes the field work associated with groundwater sampling at the Longview Fibre Company Seattle Plant on September 26, 1995. The 10-acre plant is located at 5901 East Marginal Way, Seattle Washington. Two shallow aquifer monitoring wells were sampled for BTEX, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, and WTPHd.

CH2M HILL sampling personnel arrived at the plant and checked in with Sonny Bivins, the client contact person. The CH2M HILL personnel and Mr. Bivins discussed the removal of MW-1 at the east end of the building and walked to the former location of this well and the two remaining groundwater monitoring wells at the site.

Instrument Calibration

After the site walk was completed CH2M HILL personnel calibrated health and safety and water-quality equipment. A MiniRAE photoionization detector (PID) serial number 000637 was used as for health and safety monitoring of the breathing zone. The PID was calibrated to 100 ppm isobutylene calibration gas (Hazco lot number 41925A) using a 1.5 liter per minute regulator and T-tubing. The MiniRAE read 100 ppm using the calibration gas, background at the site was zero ppm.

Two water-quality instruments were used; an Orion model SA230 pH meter, and a YSI model 33 SCT meter. The pH meter was calibrated to pH 4 and pH 7 buffer solutions and read 4.01 and 7.00 respectively. The YSI was checked against a 1,000 μ mho standard solution and read 96×10 at 24° C.

Water Level Measurements

Depth to water (DTW) and total depths (TD) were measured to determine purge volumes for the two monitoring wells. A Solinst electronic water level indicator was used for this task. The water level indicator was decontaminated between measurements by washing the probe and the portion of the tape that was used in a solution of tap water and Liquinox then rinsing with distilled water. Water level and total depth data are presented below.

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<u>Well</u>	<u>Time</u>	<u>DTW</u>	<u>TD</u>
MW-3	1400	5.80	15.36
MW-2	1501	5.20	14.38

Purge volumes were then calculated from these data. One casing volume for well MW-3 is 1.6 gallons, three casing volumes is 4.78 gallons. For MW-2, one casing volume is 1.53 gallons and three casing volumes is 4.59 gallons.

Well Purging

Prior to purging, a disposable translucent plastic bailer was slowly lowered halfway into the water in each well to evaluate if there were any product layers floating on the water surface. A sheen was noted at both well locations but neither well had a measurable layer of floating product.

Both wells were purged using single-use disposable bailers. Bailers were lowered and raised in the wells using a plastic cord reel and 100-lb test monofilament fishing line. The bailer and fishing line were discarded between wells. The cord reel was decontaminated by washing in a solution of tap water and Liquinox followed by a distilled water rinse.

Purge volumes were monitored using a 5-gallon bucket marked at gallon increments. The field parameters pH, temperature, conductivity, and the appearance of the water were noted after each casing volume was removed. Field parameter data for each well are presented below.

<u>Well</u>	<u>Purge Vol.</u>	<u>Temp. (C)</u>	<u>pH</u>	<u>Conductivity</u>	<u>Appearance</u>
MW-3	1	22.7	6.98	80 x 10	slightly turbid, gray, sheen
MW-3	2	22.9	6.89	78 x 10	slightly turbid, gray, sheen
MW-3	3	22.8	6.83	78 x 10	turbid, gray, sheen, fine debris
MW-2	1	23.0	7.19	80 x 10	yellow-brown, turbid, sheen
MW-2	2	20.6	7.40	88 x 10	same as above
MW-2	3	19.9	7.45	88 x 10	less turbid, otherwise same

Sample Collection

After purging, groundwater samples were obtained from wells MW-3 and MW-2 using the same disposable bailers that were used to purge each well. Sample number LF-MW-3 was obtained from well MW-3 at 1445. Three pre-labeled sample bottles were filled, (2) 40-ml VOAs for BTEX, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene, and (1) 1-liter amber glass bottle for WTPHd.

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Sample number LF-MW-2 was obtained from well MW-2 at 1530. Three pre-labeled sample bottles were filled,(2) 40-ml VOAs for BTEX, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene, and (1) 1-liter amber glass bottle for WTPHd.

Filled sample bottles were placed in a cooler with four gallon-size Ziplock bags filled with ice. In addition, (2) 40-ml VOAs (filled with water at the laboratory) were placed in the cooler as trip blanks. The bottles were wiped to remove any sample or preservative that could have spilled on the outside and then were packed in shock-absorbing material for transport.

A CH2M HILL chain of custody (COC) form was filled out for the samples. The samples were relinquished to Sonny Bivins at 1600. This transfer of custody is reflected on the COC form. The COC was then placed in a plastic bag and taped to the inside lid of the sample cooler. Signed and dated custody seals were placed on the cooler such that they would be broken should the cooler be opened.